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Malingering and its Detection

MALINGERING AND ITS DETECTION

UNDER THE
WORKMEN'S COMPENSATION
AND OTHER ACTS

BY

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EDINBURGH :

E. & S. LIVINGSTONE, 15 TEVIOT PLACE.


1912.

BISHOP AND SONS, LTD., PRINTERS, EDINBURGH.



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PREFACE.

EVER since the Workmen's Compensation Act came into force, the number of accidents requiring medical attention has very materially increased. Coincident with this well-known fact, compensation cases have figured in the Law Courts to a far greater extent than any others.

We must recognise that for some time sickness and accident have been at a premium, and there is no doubt that the National Insurance Act will tend to swell the roll of those undesirables whose main object in life is to trade upon the generosity of their fellowmen.

In presenting a book on "Malingering," I am appealing to three classes:—firstly, Judges and Magistrates, who may often require lucid explanations as to the precise meaning and significance of medical technicalities and phraseology; secondly, Members of the Legal Profession, so that they may

readily weigh the pros and cons of a particular case before risking inevitable defeat when brought before the Law Courts; thirdly, Insurance Companies, in order to enable them to gauge the extent of injuries following accident, and to compensate in a fair manner all deserving cases.

On this account my intention has been to show that signs and symptoms have always a corresponding pathological cause, and how the absence of such cause may be proved in cases of malingering.

The book does not presume to be a treatise on accidental injuries in general, and therefore, no attempt has been made to go into the subject of accidents to the special sense organs—eye, ear, etc., as these seldom form the basis of a malingerer's claim.

Before my professional brethren I confidently place this small volume, as I feel sure there are a few hints at least which they may find of use, and I only ask them to judge it on its merits.

ARCHD. M'KENDRICK,
F.R.C.S.E., &c.

Malingering and its Detection

UNDER THE

Workmen's Compensation and other Acts.

MALINGERING.

MALINGERING may be defined as a fraudulent mimicry of disease or injury, and there is no doubt as to its marked increase since the introduction of the Workmen's Compensation Act, 1906. Real malingering, however, is not so common as is generally supposed, but if we include what might be termed the minor forms of malingering, we embrace the vast majority of compensation cases which ultimately find their way into the Law Courts.

The tendency towards exaggeration of pain is apparently deeply rooted in human nature, for even in childhood one sees the seeds of malingering. Take the case of a child with a sore finger, limping in order to elicit excess of sympathy or even monetary compensation. As he grows older and goes to

school, he makes the most of any injury in order to escape his usual lessons. Can we wonder, then, that in adult life the injured workman makes the most of his injuries, where the reward is substantial enough to encourage a persistence of disability out of all proportion to the injuries received?

It may be argued that this "making the most of an injury" is not true malingering, but who can draw the line of demarcation?

It is a question of degree of exaggeration, and for this reason, any classification of malingerers must needs be somewhat arbitrary.

Three main classes or degrees may, however, be described:—The real malinger who has absolutely nothing wrong with him, and feigns inability to work in order to obtain compensation; the partial malingerer whose injury is trifling as compared with his description of it, and who knowingly makes the most of it; the unconscious malingerer who believes all he tells you, and whose injury though slight is honestly believed by him to be serious. He is more frightened than hurt.

There are all intermediate degrees, from the out-and-out fraud down to the unconscious fraud; and, with all due respect to the British working man, he is, so far as exaggeration of symptoms is concerned, no better than the hypochondriac of the upper

classes. The one exaggerates for compensation, and the other for compassion.

Even the workman who has received injuries sufficiently severe to entitle him to substantial compensation, has regularly to be told that there is no need for him to exaggerate his symptoms, and advised that exaggeration will only do his case harm in the event of litigation.

This tendency towards exaggeration renders the examination of injured workmen in compensation cases an exceedingly difficult task.

There is a marked difference between an ordinary medical examination, and an examination in a compensation case.

In an ordinary examination the patient comes to the doctor for advice and treatment. He is anxious to help the doctor to find out what is wrong, and during the examination it is a case of question and answer. The doctor makes a diagnosis to fit the facts of the case.

In a compensation case on the other hand, the workman comes to the doctor to state his case, and put it in the best light for compensation; and instead of the diagnosis being made to fit the facts, the alleged facts have to be squeezed into shape to fit the diagnosis. The examiner has almost invariably to set about proving several negatives, and here

lies the greatest difficulty, for the negatives usually comprise a series of indefinite aches and pains and loss of power.

Every sign and symptom has a corresponding pathological cause, and inability on the part of the medical examiner to find the corresponding cause of each sign and symptom is not of itself sufficient evidence on which to accuse a man of malingering; but if the examiner can prove the non-existence of a cause for any symptom, or if he can prove that the alleged symptoms do not correspond with the condition found on examination, he is then justified in labelling the man as a malingerer. For example, a common complaint of the malingerer is loss of power of a limb. Inability of the examiner to find a cause for the alleged loss of power is not sufficient grounds for a diagnosis of malingering; but if it can be proved that no cause exists except in the man's own will, then and then only may he be justifiably branded as a malingerer.

At first sight this appears difficult, when we consider that the muscles are under the direct personal control of the workman. By means of electricity, however, we can overcome that personal control, and delicately test the reactions of the alleged paralysed muscles. It is this difficulty of proving definitely the absence of a pathological

cause for alleged symptoms, which demands special skill and experience in the medical examination of cases under the Workmen's Compensation Act.

The medical report in such cases should contain a series of statements by the workman, a series of definite facts as revealed by examination, and a summing up of these by the medical examiner. The completed report should be so explicit in fact that an insurance company's medical expert could, from the report alone, form a definite opinion as to the genuineness of the case.

THE REAL MALINGERER.

The real malingerer is comparatively rare. He has absolutely nothing wrong with him, but feigns inability to work, and in order to receive compensation, he attributes his alleged disablement to some indefinite injury received while at work. The only cure for him is a hard-labour sentence.

It is sometimes very difficult to discover him, for he has usually had a large experience of different medical examiners, and has learned that any marked exaggeration is usually found out.

He is not so voluble as the partial malingerer who wants to make the most of his case, but rather withholds his statements. He goes warily, and has usually one definite statement to make instead of numerous complaints. His statement is generally regarding something which he has under his direct personal control. He usually avoids pain as a complaint, possibly on account of former experiences of medical examination, and alleges such a condition as loss of power of a limb or a stiff joint.

Not infrequently he is the possessor of a skin condition which is unlike any recognised skin disease. Such skin condition is self-inflicted and is of the nature of little abrasions, limited to the regions of of his body which are within reach of his right hand. All sorts of dodges must be adopted by the medical examiner in order to detect this experienced malingerer.

In hospital practice his detection is easier, especially if the examiner is demonstrating the case to a class of students. The suggestion that the case is really one of cancer in some other part of his body is sufficient to distract the malingerer's attention from the part complained of, and while the class are one by one peering into his mouth, for example, to see the cancerous growth, and the malingerer has the fear of death upon him at the thought of so real and serious a disease, the stiff joint is found to be freely movable or the powerless limb to have regained its power.

Another dodge which, however, does not frighten the man, and which seldom fails to discover the malingerer, is that of describing the alleged condition as a very rare and interesting case. It is wonderful the imposing effect of a hospital theatre. The man on the floor, the centre of all attention, the doctor with his long white coat, lecturing to a large

class of students on this very interesting case,—a case of complete loss of power of the right arm due to the accident so graphically described by the man, a case in which the posture of the patient bears a definite relationship to the paralysis. “If we support this man’s back against a wall, and raise the opposite leg from the ground—the opposite leg, gentlemen—not the leg on the same side as the paralysed arm, we will find that so long as he remains in that position he will have the power over his arm. Of course, gentlemen, it is impossible for any workman to follow his occupation in that cramped position,” etc., etc.

The malingerer who has been listening intently to the lecture, learning his lesson as to what he will have to do when he is put through his examination, and inwardly congratulating himself that he has been able to swindle so eminent a doctor, does not want to ruin his case in the end. He falls into the trap, and, when he is put into the grotesque position with his back against the wall, he fulfils the doctor’s prediction.

Sometimes a malingerer may be discovered by accident, as has happened in the Electrical Department of the Infirmary here. It was in the days before electrical apparatus was up to its present efficiency, and electrical testing of muscles was in

its infancy. The man alleged loss of power of both legs, the condition having lasted for about two years. He was brought to the Infirmary in an ambulance, and was detained in one of the medical wards for diagnosis and treatment. He was suspected of malingering by the physician in charge, and was sent on a trolley to the Electrical Department to have his muscles tested and treated if necessary.

By accident, and on account of the less efficient apparatus available at that time, a huge electric spark passed between the man and an electrical machine which he was lying near. He jumped off the trolley, and his heels were last seen in the vicinity of the Infirmary gate.

A near relation of the real malingerer is the workman who receives a slight injury while at work, which injury, however, is not sufficiently severe to prevent him getting drunk or getting mixed up in a fight. During his drunken state he sustains a severe injury which totally disables him. If this man has not already been examined, he frequently attributes his disablement to the minor injury received while at work, in order to receive compensation.

Now this is a difficult case to discover, and one which may easily be overlooked in an ordinary examination.

It is in such a case that the workman's exact statement as to how the accident happened is of the utmost value, because it should correspond fairly accurately with the condition found on examination.

If, for example, a workman has sustained a slight bruise over his hand and wrist, something may have fallen on the back of his hand, or he may have had it crushed. Several days later he is examined and has an X-ray photograph taken of the injured region. If that photograph shows a Colles's fracture, that is, a fracture just above the wrist joint, it is safe to say that the man has had a fall subsequent to, or before the alleged crush, and that the fracture is a direct result of the fall and has nothing whatever to do with the crush.

A Colles's fracture is always produced by a form of violence which is applied to the palm of the hand, as when a person falls forwards on to the outstretched hand, the whole weight of the body being thrown on to the wrist joint.

The nature of the fracture betokens this, for the small broken fragment is driven upwards and backwards by the violence, and in the same direction as the violence, and is thus frequently impacted or driven "into" the shaft of the bone.

It is possible from an X-ray photograph alone in any given case, to state approximately the nature

of the violence producing any fracture or dislocation which may be present. In other words the degree and the direction of the violence determine to a large extent the site and direction of any fracture or dislocation.

All fractures and dislocations are produced mechanically, they obey mechanical laws, and if the history of the accident does not coincide with the state of the bones as revealed by an X-ray examination, there is a discrepancy somewhere.

It is by means of such discrepancies that malingerers may often be discovered.

Another near relation of the real malingerer is the man who has contracted some venereal disease, and who, knowing the origin of his trouble, seeks to obtain compensation. He is the most frequently discovered of all malingerers so far as compensation is concerned, but he remains a malingerer so far as his relations are concerned. The doctor is treating him, and that is sufficient excuse for his absence from work. It is surprising, however, that even he may obtain compensation. He usually hides his disease during its early stages by trying to treat himself, or he tries one of the numerous patent cures with the result that, although the original trouble is masked, something else develops in its stead as the result of the bad treatment. He develops swellings in his

groin, etc., and whether from shame or for purposes of compensation, he tries hard to convince the doctor whose advice he ultimately seeks, that his condition is due to a strain, a rack, or a fall. He omits to state, however, the kind of fall—physical or moral.

Such a person may be given the benefit of the doubt, and classified along with the unconscious malingerer, but it would be fairer to all concerned if he fell under the category of real malingerer.

THE PARTIAL MALINGERER.

This is the man who robs the hen-roosts of the Insurance Company. He has had an injury, and in his attempts to make the most of it, he exaggerates his pain and disability to such an extent that he oversteps the borderland of truth, and complains of pain where none exists.

He is the common type of injured workman, who, if he were a working employer, such as a joiner in business for himself with a few men working under him, would be back at work, but who, being an employee, finds it easier to choose the idle path and draw his compensation.

He has made up his mind that he will not return to work until he is as fit as on the day when he received the injury. He adopts the attitude "I'll make them pay for this," and, knowing that he has an Act of Parliament at his back, he takes full advantage of it.

It is impossible for anyone to start off and do a hard day's work after a few weeks of idleness, and the partial malingerer makes full use of the fact that recovery is a gradual process.

The partial malingerer frequently exhibits one of the forms of "workmen's compensation back," and with him slight discomfort is magnified into excruciating pain. Or he has an injured ankle, which he alleges is so painful that he cannot bear his weight on it. His limp increases in degree as he reaches the doctor's house, and is at its maximum while in the consulting room. It gradually passes off on the return journey, and is at its minimum while he is watching a football match. This is no hypothetical case, but a fairly common experience.

It is easy to recognise that he is exaggerating, but difficult to prove that he is malingering. That is to say, by ordinary medical examination he may not be discovered but only suspected; and however much we may suspect him, we must give him the full benefit of the doubt for all symptoms which cannot be definitely disproved.

By subjecting him to a sort of cross-fire medical precognition he may be found to be shamming, or at least grossly exaggerating his symptoms.

THE UNCONSCIOUS MALINGERER.

Although apparently a contradictory term, unconscious malingering is a fairly accurate and descriptive definition of a very common type of case. He is not malingering with intent to defraud, but is malingering so far as compensation is concerned. He is either attributing his disablement to an injury when in reality it is due to disease, or he is more frightened than hurt.

The subject of unconscious malingering brings us face to face with a question which is very indefinite in the Workmen's Compensation Act, 1906, namely, Disease versus Injury.

Is lumbago, or muscular rheumatism in the back, a disease, or is it the result of injury? It attacks rich and poor alike, and is if anything commoner in the class of people who do no heavy work. Its onset is very abrupt, and it almost invariably attacks the person when attempting to rise from the stooping posture. If it attacks a workman, it is usually first painfully brought to his notice while he is lifting something, and naturally he thinks he has strained his back.

His history is rather characteristic. After the first sudden spasm which holds him as if in a vice, it passes off somewhat and he continues at work, being careful, however, to stoop as little as possible. He goes home at night and sits down to a meal, and as he so often describes it "after I got cooled down I found I could not rise."

He goes to bed, calls the doctor, and tells him that he has strained his back. The doctor advises him to rest in bed for a few days. The man gets up, and although his back is still a little painful, he goes out or sits about with few clothes on, and gets worse.

One or two fresh exposures to cold and he has a chronic sore back. It is a fairly disabling condition, but is it injury? Legally he may not be entitled to compensation, but as a rule he gets it.

Another type of unconscious malingerer is the man suffering from gonorrhœal rheumatism. A man who is suffering from gonorrhœa is practically carrying a charge of gunpowder about with him ready to explode. A slight twist, or even over-exercise of any joint, and the gunpowder will explode there. His usual history is that his joint was sore when he went to bed, and was all swollen and stiff when he attempted to rise in the morning. On being questioned as to the cause, he usually states

that it "must have been" a twist which he remembers to have had several days previously. Even in his mind the cause is indefinite.

The exciting cause of his disablement is certainly the gonorrhœa, and the predisposing cause may have been at his work, or apart from it.

Is it an injury arising out of and in the course of his employment within the meaning of the Act? From the medical point of view at least he is an unconscious malingerer, whatever he may be from the legal.

Perhaps the commonest type of the unconscious malingerer is the man who is more frightened than hurt. He craves for sympathy, and in his quest he goes from one medical man to another, and eventually finds his way to the electrical department of a hospital, where his daily attendance gives him the official stamp of an invalid.

If he is not discovered by the medical officer in charge, and discharged within a few weeks, he becomes a victim to introspection, and gradually drifts into a hopeless neurasthenic state. His symptoms may be founded on fact, but they are mostly imaginary. The more he thinks about them, the worse they appear and the more firmly he believes in them.

Eventually he becomes like the disciple of Ananias

who has told the same lie so often that he begins to believe it himself.

His case is easy to diagnose, from the long and harrowing list of subjective symptoms without a single objective sign, and from the fact that before the examination has proceeded far, he entertains his newly found medical attendant with the story as to how all his previous doctors have failed to take up his case.

Unlike the person who is suffering from "railway spine," and whose symptoms subside with the termination of litigation, the unconscious malingerer of the above type seldom resumes his former work if he has been idle for over six months.

PAIN.

The distinction between signs and symptoms is very clearly defined.

Signs are objective,—that is to say, they can be appreciated by others than the sufferer; whereas symptoms are subjective, and can only be appreciated by the sufferer himself.

It is on this account that malingering is usually described as being associated more with subjective symptoms than objective signs.

A disbelief in the actual presence of symptoms is only an opinion, and is not sufficient grounds for accusing a man of malingering. Before one can make a definite diagnosis of malingering, one must either prove conclusively that there is no existing cause for the symptoms, or that the symptoms are at marked variance with the physical signs, and therefore do not exist.

Pain, stiffness, or loss of power form the basis of nearly every compensation claim, and it is well that these should be clearly understood.

Pain is a pure symptom.

Stiffness is a physical sign which the patient complains of, and is therefore a symptom as well as a sign.

Loss of power is in the same category as stiffness.

On account of pain being entirely subjective, one would imagine that its disproof would be impossible. This is not the case however, because we know sufficient of the causation of pain to enable us to test for its presence.

All pain is due to irritation of nerve structure, and in the large majority of cases that irritation is of the nature of pressure. It follows, then, that pain will be most severe in those tissues which are most favourable to the localisation of pressure.

For example, if the nerve of a tooth is inflamed, the nerve pulp becomes engorged with blood, and its expansion is prevented by the hard bone-like structure of the tooth which contains it. Hence it is that the pain of toothache is so severe. A pimple on the cheek is not so painful as one on the brow, because the cheek is softer than the brow. A pimple just within the canal of the ear or just within the nose is very painful, because there is little room for expansion.

Where any tissue is inflamed, the amount of pain produced is proportionate to the density of that

tissue or of the surrounding tissues. The less room for expansion the greater the pain. If an inflamed or injured tissue is put upon the stretch, it increases the density and thereby increases the pain; whereas, if the inflamed or injured tissue is relaxed, the pain is diminished.

Hence it is that characteristic attitudes are produced when certain tissues are injured or inflamed. Nature attempts to relax the tissues in the region of the damage.

If the injured or inflamed tissue be pressed upon, pain will be increased; this is called tenderness, and is a valuable diagnostic aid, guiding us as it so regularly does to the site of the injury.

A sprained ankle is tender all over, because there is effusion into the joint cavity. Any pressure applied to any part of the already over-stretched joint cavity causes pain, or as it is called tenderness, but there is one point more tender than the rest—the point of maximum tenderness. This point is situated immediately over the torn ligament. By discovering this point, then, we can exactly locate the seat of actual injury.

Pain, then, if associated with tenderness, signifies that the damaged tissue corresponds with the site of the pain.

If pain is present, and there is no tenderness

associated with it, it signifies that the site of the pain does not correspond with the region of the damage. We have thus two separate and distinct types of pain to deal with, one associated with tenderness and the other not.

Pain unassociated with tenderness is rare in cases of malingering, but in order to be able to eliminate malingering, a knowledge of it is essential.

Supposing we have a patient who complains of pain, and on examination we find that when pressure is applied over the painful area there is no tenderness, it means that the seat of the pain does not correspond with the site of the lesion. This is called a referred pain, and is really the result of faulty interpretation on the part of the patient's brain regarding the site of the lesion. Such a pain is usually neuralgic in character, and is caused by a lesion somewhere in the course or distribution of the nerve supplying the painful area. It behoves us, then, to subject the whole course, distribution, and anatomical connections of the nerve under consideration to the closest scrutiny in order to detect the *fons et origo mali*.

One of the commonest examples of referred pain is exhibited in ordinary toothache, and it would surprise most people to know that nearly 50 per cent. of patients with toothache blame the wrong tooth.

The patient usually blames some dead stump, because the pain is referred along a path which it has travelled before, and because the dead stump is a source of chronic irritation. It falls to the part of the examiner to locate the exact site of the lesion. This he does with a sharp pointed instrument, and immediately the sharp point comes in contact with *fons et origo mali* a paroxysm of pain is set up.

When we consider that all the teeth, upper and lower, on one side of the head, are supplied by the same nerve, it is easy to see how patients frequently blame a tooth situated in the lower jaw, when in reality the cause of the toothache is in the upper jaw, and vice versa.

The knowledge of referred pain makes us cautious with regard to malingering, because of the exhaustive examination required in order to locate its cause. There is one point, however, which may make us suspicious when pain is alleged, which on examination we find is not associated with tenderness, and that point is in regard to its distribution.

The whole body may be mapped out into definite areas, corresponding fairly accurately with the distribution of the various nerves of the body. Now, if a person complains of referred pain in several of these areas, and the nerves supplying these areas have no anatomical relations in common with each

other, we have good grounds for suspecting that the pain is *non est*.

Pain associated with tenderness is one of our most valuable aids in the detection of malingering. We have seen that any damaged or inflamed tissue is painful and tender, and that if we increase the pressure by putting that tissue on the stretch, the pain is correspondingly increased. If the tissue is relaxed the pain is diminished.

All the joints in the body are surrounded by ligaments. Take, for example, the ankle joint, and let us suppose that the ligament on its outer side is damaged as in an ordinary sprained ankle. From what we know of pain it is obvious that, in this case, it will be associated with tenderness immediately over the outer ligament. The whole ankle is, of course, tender, but the point of maximum tenderness is situated over the outer ligament.

We know that if we bend the ankle inwards, the outer ligament will be put upon the stretch and pain will be increased. If, on the other hand, the ankle be bent outwards, the outer ligament will be thereby relaxed and the pain will be eased.

The malingerer is unaware of this, and complains of pain on all movements,—irrespective of the point of maximum tenderness.

Pain on the performance of all movements signifies

that the joint is inflamed or the bones broken. The tenderness is then more widespread. An X-ray examination is the only accurate means of diagnosing the condition, but in the absence of X-rays the malingerer, who alleges pain and tenderness which do not correspond, may sometimes be detected un-
awares.

His mind can easily be distracted from his painful joint by introduction of the subject of compensation. Most malingerers wax eloquent on the inadequacy of compensation, and while thus engaged, the joint may often be freely moved by the medical examiner without any complaint on the part of the would-be sufferer.

The pain associated with disease or injury of muscle is usually only evidenced when the affected muscle is thrown into action.

A good example of this is the common form of "workmen's compensation back," namely, "lumbago." It comes on suddenly while the man is at work, usually when he is lifting something. The pain is sudden and severe, and the man honestly thinks that he has racked his back.

On examination it is found that he has no pain when he bends forward, but only when he attempts to rise from the stooping posture, that is to say, when he throws the inflamed muscles into action.

If the examiner lifts him from the stooping position without any effort on the workman's part, the muscles are not thrown into action and no pain is produced.

It is obvious in this case, therefore, that the muscles are at fault, and it is evident that the ligaments at the back of his spine are not injured, because he has no pain when he bends forward—a movement which would stretch these ligaments.

As already stated, pain produced with every movement signifies gross injury to bone or joint, and if alleged to be present in a case of workmen's back, can only be refuted or corroborated by an X-ray examination. The character of any pain as described by a patient is of importance, as pain varies in character according to its site, severity, and stage, if the lesion be an inflammatory one.

Traumatic neuritis is a term which is very loosely used in reporting on compensation cases.

It means an inflammation of nerve caused by injury, and is characterised by pain in the distribution of that nerve, accompanied as a rule by hyperalgesia of the skin (increased perception of pin-prick), and, almost invariably, by wasting of muscle. Other forms of neuritis are not as a rule accompanied by wasting of muscle.

STIFF JOINTS.

A joint may be stiff from various causes. It may be locked by bony outgrowths, the joint surfaces may be glued together by old inflammatory material, or the tissues on one side of the joint may have become actually shortened.

If a joint is inflamed, it is held in a characteristic attitude, which depends to a great extent on the relative strength of the muscles on either side of it.

The muscles which bend a joint are, as a rule, stronger than the muscles which straighten it. Most joints when inflamed, therefore, are held in a bent position.

The wrist joint, the forefinger, and the thumb joints are held straight, however, because the muscles on either side of these joints are of about equal power.

The malingerer is unaware of the characteristic attitude of all inflamed joints, and he is often therefore detected when he alleges having an inflamed joint.

The different varieties of stiff joint can usually be determined by means of an X-ray examination. The unconscious malingerer often exhibits a stiff joint, the result of a limb having been kept in an absolutely fixed position for a period of four or five weeks.

He won't move it nor allow it to be moved, because the movement causes him pain. The state of affairs within his joint is easily understood when we consider that the lining membrane of a joint is a very loose structure, in order that it will not be overstretched in the performance of the various movements of the joint. When the joint is bent, the lining membrane in the flexure of the joint is thrown into concertina-like folds. If a limb be kept rigidly flexed for a period of several weeks, the concertina-like folds get glued together, and the tearing of the adhesions causes pain. The longer the adhesions remain unbroken, the more stiff does the joint become.

The partial malingerer makes full use of the fact that such a joint is painful on movement, and refuses absolutely to allow a third party to do it for him. The real malingerer exhibits a totally different joint. It is stiff because he holds it so. There is no glueing of the concertina-like folds in his joint, because it is only stiff while on exhibition

and is relaxed during sleep, or while its possessor is under the influence of alcohol.

He is fairly easily detected if an X-ray photograph is taken and shows no reason why the joint should be stiff, the examiner is then safe to bend forcibly the alleged stiff joint; or if the muscles are stimulated electrically, when no amount of will power can prevent the muscles themselves moving the joint.

In the absence of electrical means, the administration of chloroform will settle the question as to the genuineness of the case.

LOSS OF POWER.

As already explained, loss of power is a sign as well as a symptom.

It is one of the most frequent allegations of the malingerer, and, at first sight, when we consider that the muscles are under his own personal control, and no great strength is required as in the case of an alleged stiff joint, it would appear that disproof of loss of power would be a difficult task. It is, however, one of the easiest signs and symptoms to demonstrate as non-existent.

In the absence of electrical apparatus, the medical examiner must resort to methods of trickery and bluff with the malingerer, as, for example, by distracting his attention while the alleged paralysed limb is being supported, and at the proper time, gradually withdrawing the support. The medical examiner may have to play the malingerer at his own game, acquiescing in every sign and symptom, giving him leading questions, and eventually explaining to him that his case is a very interesting one, and one which is perfectly clear, though uncommon, and, for example, that he will only be able to move one of the terminal joints of the limb

in a certain position. He usually falls into the trap, and in turn acquiesces in the medical examiner's prediction.

A more barbarous method, but one which is very efficient as a rule, is to have the limb fully stretched out on the examining table, and while in that position to administer a sharp pin-prick, or other such painful and unexpected form of stimulation to the extremity of the limb. The limb is quickly withdrawn from the danger zone as a rule.

When the allegation is partial loss of power or weakness in a limb after injury, the foregoing methods of detection are useless, and the medical examiner is forced to adopt electrical methods of diagnosis.

By this means we can estimate the condition of the muscles and nerves with a fair degree of accuracy.

Traumatic neuritis is a cause of weakness of muscle, but this is accompanied by pain, and the muscle shows electrical charges. Weakness of muscle from disuse is accompanied by wasting, and such muscles also exhibit an alteration in their electrical reaction. The reactions of healthy muscles to electrical stimulation are very definite and invariable, so that any deviation from the normal can be easily detected.

BACK INJURIES.

It is on account of the relative frequency with which back injuries figure in Workmen's Compensation cases, that it has been deemed advisable to devote a special chapter to this subject.

There is no more puzzling condition for the medical examiner to report upon than an injured back, and no more difficult task for a judge or jury than the interpretation of such a report.

That the whole subject is bristling with difficulties is not to be wondered at, when we consider the complex anatomical arrangement of the structures entering into the formation of the back, and the consequent inaccessibility of any injured part.

The vertebral column or backbone is composed of separate vertebræ held together by interlocking of their bony processes, and by means of ligaments stretching between each individual vertebra.

The whole is surrounded by the muscles, whose function it is to hold the body erect and to move the spine. The movement of the spine is limited

in range, therefore, not only by muscles, but by ligaments, and by the interlocking of the bony processes already referred to. The spinal cord is enclosed within the vertebral column, and through notches between each of the individual vertebrae emerge the branches of the spinal cord or nerve trunks which go to supply the body with sensation, motion, etc.

The areas supplied by these nerves are definitely known, and the level at which each pair leaves the spinal cord is also known. We have thus a means whereby we can tell at what level in the spine any lesion may exist, for as surely as there is any pressure in the region of the origin of a nerve, there will be symptoms or signs to be discovered in the area of distribution of that nerve. If the pressure is so severe as to block the way of nerve impulse, there will be paralysis. If the pressure is less severe, there will be pain or hypersensibility.

In dealing with injuries to arms and legs, it has been shown that the question is purely a mechanical one, and so it is with back injuries, but with one difference, and that difference is on account of the enclosed spinal cord.

The back injuries, which form the basis of so many compensation claims, do not as a rule have

any complications involving the spinal cord, but as such cases do occasionally crop up, it will be necessary even in this short chapter to allude to them briefly.

Anatomically, the spinal column from the head to the pelvis is divided into three portions:—(1) The cervical, or neck portion; (2) the dorsal, or chest portion with the ribs attached; (3) the lumbar, or the portion which corresponds with what is commonly known as the small of the back.

Mechanically, the spinal column may be looked upon as a flexible pedestal whose base is the pelvis, and on whose apex the head is supported. There are twenty-four separate vertebræ comprising this pedestal, and the weak link in the chain is situated at the junction of the dorsal and lumbar vertebræ. For this reason, if the spinal column is subjected to strain, it will most likely give way at the dorso-lumbar junction. This is borne out by statistics which show that 80 per cent. of all fracture-dislocations of the spine occur at that point.

In the spine, as elsewhere in the body, the nature of the violence determines to a large extent the nature of the injury. A short, sharp blow might possibly fracture one of the bony processes projecting from the spine, whereas a heavy blow will continue to act even after it has met with the

resistance of the spine, and the continuance of its force will probably drive the vertebra struck off its articulation with the more fixed vertebræ nearer the base of the pedestal. Some of the bony processes being invariably torn off in the process, this is called a fracture-dislocation of the spine. In such an injury the spinal cord, which is contained within the spinal column is sheared through, and as repair of the spinal cord never occurs, the disablement is absolutely permanent.

Forcible bending of the spine may compress the vertebræ to such an extent that they may become fractured, but in this case there is not necessarily any damage to the contained spinal cord. The articulations of the various vertebræ with one another are undisturbed, and so the condition is called fracture of the spine.

Severe twist, strain, or sudden movement is practically never sufficiently severe to produce any injury to bones or joints in the spine. It may, however, result in rupture of muscles or ligaments or, if the violence is less severe, in strain of these structures. This is the usual workman's back, and as the medical examiner's opinion regarding the probable duration of incapacity for work seldom corresponds with the workman's, many of these cases find their way into the Law Courts.

A strained back is one of the commonest allegations of the malingerer, so common in fact that most medical examiners have learned to look askance on any case of back injury.

Although, perhaps the majority of cases may be genuine, the minority forms so numerous a class that the term "workmen's compensation back" has come to be applied to the condition.

In no case is there more need to go minutely into the history of the accident in every detail than in back injuries.

The exact attitude of the workman at the time of the accident is always important, and if the case be one of strain, the actual movement which produced the strain must be studied anatomically and mechanically. The medical examiner should, from the history of the accident, be able to tell definitely the various muscles which would be in action at the moment of strain, and the various ligaments which would be on the stretch at that instant.

Now, if any tissue is strained or torn, it will be tender on pressure, and pain will be increased on further stretching the damaged tissue, and will be diminished on relaxing it.

If a muscle be torn across, it will be tender on pressure, and there will be immediate loss of

power. On performing the movement which should stretch the torn muscle, practically no pain will be produced, because that movement only increases the size of the gap without actually stretching the muscle. If, however, the injury is not of recent date, the damaged muscle may have become adherent to other structures in the vicinity, and any movement which tends to move these structures will produce pain.

If any muscle or its fibrous prolongation is partially torn, the point of maximum tenderness will be situated over the tear, and there will be pain produced when that muscle is thrown into action, or when a movement is performed which over-stretches the damaged muscle.

Muscle is elastic in nature, so that in the above case it is *over*-stretching which produces pain.

In order to save repetition, various types of back injuries will be briefly described:—

Strained Muscles of Back.—This injury is produced during the performance of severe muscular exercise such as lifting a heavy weight, and under this same category may be included such injuries as are produced by direct violence applied to the back, in which case the muscles are bruised instead

of strained. In both cases the actual lesion in the muscle is practically the same.

The muscles involved are those situated on the posterior aspect of the spinal column.

There will be pain complained of in the region of the damage, and on examination it will be found that there is tenderness all over the painful area, with a point of maximum tenderness immediately over the damage.

There will be pain on attempting to rise from the stooping posture, and pain on stooping beyond the usual range, that is, pain when the normal elasticity of the muscle is exceeded: The disablement is *immediate* after receipt of such an injury, and the probable duration of disablement depends upon the actual amount of damage done to the muscle or its prolongation. The average period, however, may be set down as three or four weeks. Unfortunately, the workman's opinion regarding duration of incapacity for work seldom corresponds with the medical examiner's, and this is due to the fact that recovery is a gradual process, and that there is bound to be some stiffness left, which will not disappear until the injured part has had a considerable amount of exercise. Such exercise is accompanied by pain, which, although it is not sufficiently severe to deter an employer from work,

is sufficiently so to deter an employee. Hence the reason for so many of these cases finding their way into the Law Courts.

Strained Ligaments of Back.—This injury is more severe than strained muscles, and is produced by over-bending of the spine in any direction.

If the ligaments on the posterior aspect of the spinal column are torn, the injury has been produced by forcible bending of the spine forwards (if the violence continued to act, the bones would give way). There will be severe pain immediately on receipt of such an injury. There will be a well-marked point of maximum tenderness immediately over the torn ligament, and although at first there will be pain on the performance of all movements of the spine at that region, there will be severe pain on extreme bending forwards (*i.e.* the movement which stretches the torn ligament). The probable duration of disablement in this case will be two to six months according to the actual amount of damage.

If the ligaments on the anterior aspect of the spine are torn, the injury has been produced either by forcible bending backwards, or by the workman making a sudden movement to recover himself from falling. This injury is even more alarming

than when the posterior ligaments are torn, because of the possibility of its being followed by tuberculous disease of the spine. There is indefinite pain in the back, no tenderness, and only pain when the spine is forcibly bent backwards.

The symptoms and signs are few, and the medical examiner must be careful not to conclude that the man is malingering on that account. The following case is of interest in that respect:—

H. M., a cable car driver, gave the history that, while boarding his car he missed his hold on the rail, and in trying to save himself, jerked his back. He had been under treatment for some time, and was eventually referred to the writer, as a malingerer. The Insurance Company requested a medical report, and in that report I told the Company that I would reserve my opinion on probable duration of disablement till several months should elapse, as I had seen similar cases develop tuberculous disease of the spine. To cut a long story short, the man's spine was X-rayed from time to time, and within seven months of his injury there was well-marked tuberculous disease of the spine evident on X-ray examination. This man has been confined to bed for nine months, and it will be another nine months at least until he is fit for work.

It will be noticed that, although the signs and symptoms associated with tearing of the anterior ligaments of the spinal column are few, they are none the less definite—deep-seated pain, which is markedly increased only when the spine is forcibly bent backwards.

Lumbago.—Although this condition is *not* really a back injury, it must be included in this classification, because of the frequency with which it figures in Workmen's Compensation cases. It is really rheumatism in certain muscles in the lumbar region, or small of the back as it is called. Exposure to cold certainly predisposes to the condition, although such history is not always forthcoming. The onset is sudden, and is invariably first felt when the individual is attempting to rise from the stooping position. If he happens to be lifting any weight at the time, there is nothing more natural than that he should believe that he strained the muscles of his back. There are several points of difference, however, between strain and lumbago, although so far as duration of incapacity is concerned they are very much alike.

In lumbago there is no point of maximum tenderness. There is no pain on extreme forward bending, and although attempted rising from the

stooping posture is painful, there is no pain if the medical examiner lifts the patient from the bent position.

Apart from these signs and symptoms, medicinal treatment has beneficial effects in lumbago, whereas it has no effect in a case of strained muscles.

Concussion of the Spinal Cord.—By this is meant an impairment or loss of function of the spinal cord due to injury. The term “concussion” is debatable, but the fact remains that after severe blows in the region of the spine, or after a fall on the buttocks, symptoms develop which show that the cord has been injured in some way, and there is produced below the level of the injured region a paralysis which is usually recovered from in six to twenty months. If death takes place before the paralysis is recovered from, a microscopic examination of the spinal cord usually reveals minute hæmorrhages into the grey matter (nerve cells) of the cord.

Railway Spine.—This condition must not be confused with concussion of the cord. The two are totally different, and never occur in conjunction with one another.

In concussion of the cord the symptoms follow almost immediately on receipt of the injury, and

there is an actual lesion within the cord, whereas in "railway spine" the symptoms do not come on till some days or even weeks have elapsed, and there is no discoverable lesion in the cord.

Railway spine is really a form of *traumatic neurosis* or traumatic neurasthenia, and is characterised by an entire absence of physical signs and a preponderance of subjective symptoms. It is an affection of the brain rather than of the spinal cord. The individual gradually develops nervous symptoms, which may vary widely in different cases, but which may be briefly summed up as follows:—General weakness, nervousness, irritability, inability to concentrate attention, sleeplessness, and loss of memory. There may be all sorts of symptoms relative to the special senses, such as dimness of vision, giddiness, hypersensitiveness to sound, etc., but all this is unaccompanied by any definite physical sign. In examining such a case, special attention should be paid to the state of the deep reflexes, knee jerks, atrophy of muscles, etc., for if impairment of reflexes or marked atrophy be present, there is probably some organic lesion in the central nervous system. While litigation is pending the symptoms continue, but after settlement of the claim, whether in his favour or otherwise, the symptoms rapidly pass off.

Gross Injury to Spinal Column and Cord.—Under this heading may be included fracture-dislocation of the spine, fracture of the spine *plus* contusion of the cord, and hæmorrhage into the spinal cord.

These injuries are so severe and so definite in their symptomatology that they are never feigned by the malingerer. A point of medico-legal interest, however, is the difference in prognosis in the various cases. In fracture-dislocation of the spine the spinal cord is cut through, and the resulting paralysis is complete and absolutely permanent, on the other hand, cases of fracture of the spine *plus* contusion are recoverable. The differential diagnosis is not always easy, but it may be stated that the paralysis associated with fracture-dislocation is immediate, absolute, and annular (that is it follows a line drawn horizontally round the body), whereas the paralysis associated with fracture *plus* contusion of the cord is not immediate, it is not absolute and it is not annular.

From the foregoing list of different back injuries and their associated signs and symptoms, it will be easily seen that their complexity offers the malingerer a large field for him to make evil use of.

His detection is not attained by fitting his case to one of the recognised injuries, but rather by

localising the alleged injured tissue according to his own story, and then confining the attention to that tissue and testing minutely to ascertain whether or not it has been injured. If, for example, pain is alleged on the performance of even the slightest movement in any direction, it signifies that there has been injury to bone, and an X-ray examination will prove or disprove the existence of such a lesion.

INTERCURRENT DISEASE.

The term intercurrent disease is meant to include any constitutional or local disease which a person may be suffering from at the time of an accident, or which he may have contracted after receipt of the injury. By far the most important of such diseases are those which are micro-organismal in origin, such as gonorrhœa, tuberculosis, and syphilis. Micro-organisms for their development within the human body require a definite period of undisturbed rest. It is for this reason that tuberculous disease is liable to follow upon such an injury as a sprained ankle, in which case there is a large effusion of blood into and about the ankle joint. Nature's process of removal being a slow one, the tubercle bacillus is afforded the period of rest necessary for its development. On the other hand tuberculous disease is an uncommon result in the case of a fracture near the ankle joint, because the process of repair of bone is an active one, accompanied by a plentiful supply of

blood to the injured tissue; there is, moreover, no large cavity filled with blood. The tubercle bacillus in this case is not afforded the rest necessary for it to establish a depot there.

For our present purpose, however, gonorrhœa as a cause of protracted disablement after injury is *facile princeps*, and even as a cause of malingering it holds a place of some importance.

The gonococcus (the micro-organism causing gonorrhœa) does not require the same lengthened period of rest as is required by the tubercle bacillus, and so it is that after slighter forms of injury the gonococcus may establish a depot in the damaged tissue.

The joints of the human body are a favourite resting-place of the gonococcus, especially if a joint contains more fluid than usual, as it does after a slight twist, or, in the case of the knee or ankle, even after a long walk.

Once the gonococcus has established itself in a joint it is extremely difficult to get rid of. The joint swells up and causes disablement which may last for months, years, or even for life.

Gonorrhœal joint affections are so common in the course of gonorrhœa, that the possessor of such a malady would be well advised to consider himself as made of glass, lest some slight twist

of a joint should result in his permanent disablement.

If a workman sustains a slight twist of one of his joints, and on examination he gives the history that it was only after a few days interval that the joint began to swell, the medical examiner is justified in at least suspecting gonorrhœa as a cause. If a gonorrhœal joint can be definitely diagnosed, the question arises—Should its possessor be considered as a malingerer? He is unaware that his disease is the exciting cause of his disablement, and that the twist is only the predisposing influence which has determined that joint as a site of a complication of his self-earned disease.

He is, therefore, at least, an unconscious malingerer so far as compensation is concerned. It is perhaps more frequently the case that the man stops work on account of the swollen joint; as is only human nature he looks back a few days to see if he can account for it by accidental injury, and it is only then that he remembers having sustained a twist or bruise.

There is still another gonorrhœal joint affection for which many workmen receive compensation, and that is a dry polyarticular gonorrhœal rheumatism. It is very like ordinary rheumatism, and the workman usually attributes the condition to his having

been forced to work in a draught, or in a workshop where the roof above his bench is not water-tight.

Although important and interesting from the medical aspect, intercurrent disease, either as a primary or secondary cause of disablement, must remain a source of loss to all insurance companies. It is unfortunate, however, that venereal disease as a cause does not preclude its possessor from partaking of insurance benefits.

X-RAYS.

X-ray photography, or more correctly "Radiography," is one of our most recently-acquired diagnostic aids, and on that account it is perhaps excusable that its value is at present not fully appreciated. It furnishes a mathematically exact record of facts, which, although they are perhaps difficult of interpretation, are none the less conclusive and definite.

There is more in a radiograph than meets the eye, and it is only after an extended experience that one is capable of forming a full estimate of the facts contained therein.

It is at once a record of facts past and present, and affords much information as to the ultimate fate of the injured parts.

In cases of gross injury to bone, the value of an X-ray examination cannot be exaggerated; in fact, it is imperative in every medico-legal compensation case.

It is an absolute proof as to whether or not bones

have been injured, and is, further, a means by which we can detect any alteration in the structure of the bone which may have been produced by previous injury or disease.

The structure of bone is subservient to its function, that is to say, a bone whose function it is to perform habitually certain duties, is of such gross shape and of such internal structure as to enable it to perform these duties to the best mechanical advantage.

The architecture of a bone, then, depends upon that bone's function, and the bone will be best suited to withstand the strain which its duties demand of it. If the strain is put upon it in other directions it is weak, and if the force be great enough it will break. The subject of the production of fractures is, therefore, purely a mechanical one. We know the mechanical structure of the bone, and if we know the form of violence applied to it, we can predict the site and direction of the fracture produced.

This being so—if we have a visible record of the site and direction of a fracture as obtained from a radiograph—we can, knowing the structure of the bone, tell approximately the form of violence which has produced the fracture.

For example, in fractures about the ankle joint,

one can tell from the radiograph alone whether the injury has been produced by a crush, a twist, a fall on the feet, or by a kick.

This is of great value where there is any suspicion that the alleged injury is not the real cause of a workman's disablement.

The subject of dislocations is similarly a mechanical one.

The bones entering into the formation of a joint are held in position by their shape, by ligaments, and by muscles.

The strength of the hip joint, for example, depends upon its bony shape, that of the knee-joint principally upon ligaments, and that of the shoulder joint almost entirely upon the muscles surrounding it.

This accounts for the relative frequency of dislocation of the shoulder joint when compared with dislocation of other joints in the body.

These are important facts to bear in mind when dealing with the actual cause of gross injury to bones and joints, because if a man falls on to his outstretched hands, the usual result is a fracture of the bones near his hand (Colles's fracture), on account of his muscles being braced up to keep his face and body protected from damage. If, however, he is under the influence of alcohol, the muscles are relaxed and there is no attempt to brace them up, the

joints are flaccid, and the incidence of the violence is on the shoulder joint. So it is that the violence which in a sober person would produce a fracture in the region of the wrist, produces in a drunk person a dislocation of the shoulder joint.

The subject of fractures and dislocations has only been put on a scientific basis since the introduction of X-ray examinations. Considering the fact that such evidence is available, and that radiography has attained its present degree of perfection, it is surprising that it is not more frequently called into requisition in cases of accidental injuries to workmen.

Malingering is frequently discovered by means of an X-ray examination.

On the other hand malingering may be disproved by its aid, as happened recently in a Workmen's Compensation case which I examined. A workman had received a head injury. He was treated by several physicians and surgeons, and of these, four gave reports to the effect that the man was malingering. On X-ray examination it was discovered that he had an extensive fracture of the skull. This man had been treated for eight months, and had never been subjected to an X-ray examination. He was awarded compensation on the strength of the X-ray photograph.

If there is anything worse than failing to detect a malingerer, it is labelling a man as a malingerer when he is not.

In fairness to all concerned, then, an X-ray examination should be a part of the routine examination of injured workmen.

ELECTRICAL TESTING OF MUSCLES AND NERVES.

It is neither possible nor necessary that the subject of electrical testing of muscles and nerves be gone fully into here, but a few facts will be given to show how scientifically exact the method is, and how, by means of such tests, the ultimate fate of damaged muscles and nerves can be definitely foretold.

It is, further, a means by which we can entirely eliminate the personal control of muscle, and thus detect the malingerer whose allegation is that of loss of power.

In this, as in X-ray examinations, we are furnished with an exact record of the actual state of affairs in an injured region.

The corresponding muscles of the two sides of the body will always react in an identical manner to the same strength of current, hence the alleged healthy limb may always be taken as a standard.

Two different forms of electric current are employed, viz.:—the continuous or galvanic current, and the interrupted, alternating or faradic current.

The use of the faradic current in the diagnosis of neuro-muscular conditions is invaluable. It is a certain means of testing the conducting power of nerve structure.

When both muscle and nerve are healthy, and the faradic current is applied in the region of the nerve, the muscles supplied by that nerve are thrown into contraction. Such contraction is developed sharply and suddenly, and ceases as suddenly when the current is turned off.

If a muscle be wasted from disuse, the briskness of contraction and relaxation is diminished. If the nerve be totally damaged, the reaction is lost, and there is no contraction produced on applying the faradic current.

The same condition obtains in the case of permanently paralysed muscle—there is no reaction to faradism.

In the case of temporarily paralysed muscle on the other hand, there may be a contraction produced on application of the faradic current, but, as will be seen later, the temporarily paralysed muscle can be detected by application of the continuous current.

From the point of view of detection of malingering, it is an important fact to bear in mind that recovery occurs in an orderly manner. The fact

that voluntary motion returns sooner than normal electrical reactions after a nerve injury is extremely important. In cases in which there has been a definite nerve injury, and as is usual there has been loss of reaction to faradism in the muscles supplied by that nerve, the return of faradic excitability without the return of voluntary movement may be considered definite proof of malingering. In the faradic current, then, we have a means of testing the conductivity of nerve, and when it is applied there is a contraction of muscle produced which lasts until the current is turned off.

In the **continuous** or **galvanic current**, on the other hand, we have a means of testing muscle, and when it is applied there is only produced a brisk twist of the muscle at the moment of turning on, and at the moment of turning off the current. There is no prolonged contraction as is the case when faradism is applied.

A muscle will react to galvanism so long as there is a particle of contracting substance left within that muscle.

In dealing with the galvanic current we have four factors to take into consideration. There are two different poles, a positive and a negative pole, with different powers.

There are two different effects produced according

as the current is turned on or turned off. Turning on the current is termed "making" it; turning off the current is termed "breaking" it. The exact strength of current required to produce a contraction of muscle can be accurately measured.

Now, if we apply the positive and negative poles to different parts of the body, and gradually increase the strength of the current, turning it on and off as we proceed, the following phenomena will be observed if the muscles and nerves are healthy.

When we reach a certain strength of current, there will be seen to occur a brisk twitch of the muscle immediately underneath the negative pole at the moment of making the current. No such change is seen under the positive pole, and if we now turn off (break) the current, nothing happens and no twitch occurs anywhere.

If the current be gradually increased in strength, we will reach a point where a twitch occurs under the positive as well as under the negative pole. The positive twitch, however, is not so marked as that under the negative pole. On turning off the current, no twitch occurs under either pole.

A still greater current will produce a twitch under both poles at the moment of making the current, and also a twitch under the positive pole at the moment of breaking the current.

A stronger current still will produce a twitch at both poles on making the current and on breaking it.

It will be seen, then, that normal muscle reacts in a very definite way to electrical stimulation.

Any deviation from the above indicates that the muscle under consideration is unhealthy.

"Reaction of Degeneration" is a term employed to denote in electrical testing that there is complete loss of reaction to faradic stimulation, and a change in the order of events on galvanic stimulation. On making the current, the twitch produced is first observed under the positive pole, instead of under the negative pole, as is the case in healthy muscle. It is only since the adoption of electrical testing of muscles and nerves that the diagnosis and prognosis of diseases and injuries of these structures has been elucidated and set on a scientific basis.

MEDICAL EXAMINATION.

The medical examination of injured workmen has undergone marked changes since the Workmen's Compensation Act came into force. It now requires the skill of a lawyer and that of a doctor combined. It is a "precognition" plus a medical examination, because one must ever be on the look-out for the malingerer.

All men are not malingerers, but all injured workmen are tempted to make the most of any injury received while at work.

This may seem the view of a pessimist, but after considerable experience in compensation cases, and daily coming in contact with malingerers in the largest general hospital in the country, I have learned to look with more than usual scrutiny into any case of accidental injury to a workman.

The electrical department of a hospital is the happy hunting-ground of the malingerer, because his daily attendance there for treatment gives him the official stamp of an invalid.

It is frequently, however, an unhappy hunting-

ground, because of the searching and exact methods of diagnosis available in such a department.

On the other hand it must be said that suspected malingering may be disproved by X-rays and other electro-diagnostic methods.

For these reasons it is only fair to the employee as well as to the employer, that any workman who is unfortunate enough to be injured while at work should be subjected to the most thorough medical examination possible.

Every sign and every symptom must be thoroughly investigated, for each has a corresponding pathological cause.

The examination is directed towards the discovery of such cause.

It should be noted that symptoms are purely subjective, or what the patient feels and complains of. Signs are objective, or what may be made out on examination.

Where one cause produces several signs and symptoms, these must have a very definite relationship to one another, and must correspond in detail.

So it is that after a medical examination we get a complete picture, all the signs and symptoms corresponding not only with each other, but with the history of the accident.

Any want of correspondence must be more thoroughly investigated, and if co-relation cannot ultimately be established, one must set about trying to prove negatives, and however much the medical examiner may suspect the man of malingering, he has not yet sufficient grounds for establishing that diagnosis. If, however, he is able to prove clearly that no cause actually exists for certain of the alleged symptoms, he may then, and then only, give a definite diagnosis of malingering.

Not only should signs, symptoms, and cause be compatible, but the history of the accident and all the conditions found on examination ought to correspond in every detail.

If, as is usually the case, a medical report is required, it is best to commence the examination by recording the history of the accident in the man's own words, but bereft of circumlocution. It is well also to record in order his symptoms since the date of injury.

~~It~~ This forms a good basis to work upon, and should be found to agree accurately with the condition found on examination.

It has already been shown, for example, how a definite form of violence produces a correspondingly definite form of fracture as revealed by X-rays, and how a chronological record of symptoms reveals the

changes which are actually occurring within an injured region.

At the beginning of the personal examination, although it is not always necessary to record the facts, the attitude of the patient, any obvious deformity, and the position of any injured limb should be noted.

Different injuries have different characteristic attitudes and deformities associated with them. If we take, for example, several injuries in the region of the shoulder joint—dislocation of the collar bone, fracture of the collar bone, dislocation of the shoulder, fracture just below the shoulder joint, each of these injuries has a different characteristic attitude or deformity associated with it.

It is impossible to go fully into the diagnosis of all injuries, but a general description of the methods of examination and the significance of the facts thereby revealed, will be of service to show how the facts are obtained, and how a diagnosis is based thereupon.

As an example, let us take the case of a workman who has had an injury in the region of the shoulder joint. The first point to settle is what structure or structures have been damaged. If the skin or structure immediately underneath the skin be damaged, as in a bruise, there will be superficial

tenderness and discoloration according to the time which has elapsed since the injury. Movement of the arm will cause discomfort, but not actual severe pain.

If the damage is to muscle, there will be tenderness localised to the site of the lesion, and extreme pain when the man attempts to perform the movement which is ordinarily produced by that muscle, but there will be no pain when such movement is artificially produced by the medical examiner, that is to say, when the workman does not throw the affected muscle into action.

If the damage is to a ligament, there will be tenderness localised to the site of the lesion, and pain only when the injured ligament is put upon the stretch whether by the examiner or by the man. The pain in this case will be relieved when the injured ligament is relaxed.

The attitude of the injured limb is one in which there is most relaxation of the injured ligament. If the injury is to the joint itself or to the bones in the vicinity, all movements of the joint will be painful whether performed by the man himself or by the examiner, and there will be tenderness all round the injured part.

If the injury is to nerve structure, the diagnosis is more difficult, but even in the absence of electrical

testing, the medical examiner can form an opinion as to which nerve is injured, because we know the muscles supplied by the different nerves in the body, and also the areas of skin supplied by each nerve.

It will be seen from the above that it is possible to record a series of facts elicited in the examination of an injury. The record of these facts is the important part of any report in a Workmen's Compensation case. The medical report on both sides of the case will then agree, and any difference will be confined to the summing up of these facts.

If we now examine in detail the facts elicited, we will be able to appreciate their significance in any compensation case, for the discovery of any contradictory findings means, either that the method of examination has been faulty, or that the statements of the man are untrue.

If, for example, there is alleged increase of pain on relaxing an inflamed or injured tissue, or if the man complains of pain at one time and no pain at another when the same movement has been performed, then malingering may be justifiably suspected.

Tenderness.—The point of maximum tenderness indicates the exact site of the injured or inflamed structure. If the pressure be increased the pain thus produced will be increased, or if the tender struc-

ture be stretched it will cause pain. If pressure be reduced, as in relaxation of the damaged tissue, pain will be diminished.

These points are of importance, not only in the detection of malingering, but in the exact diagnosis as to the extent of an injury.

For example, in the case of an injured knee-joint, so common in football players and miners, where a weight has fallen on to the outer side of the knee, the ligament on the inner side of the knee gives way and is tender; but the point of maximum tenderness indicates accurately the site of the damage. This is an important point, because, if the rupture has occurred above the level of the joint, the case will be one of simple sprain, but if the point of maximum tenderness indicates that the rupture has occurred below the level of the joint, it is almost certain that one of the cartilages within the joint will be torn away from its attachments, and the case seriously complicated thereby. This constitutes the common condition known as displaced semilunar cartilage.

Active Movement.—This is movement which is performed by the patient himself. It is impossible when a muscle is paralysed or torn across, but passive movement is possible in the same direction.

Active movement which causes pain signifies several things. If it is present in every movement of the joint, there is mischief within the joint cavity. If it is present in one direction and in the opposite direction only, the mischief is almost certainly in connection with a tendon passing over or near the joint.

Pain on movement in one direction only signifies either that the muscle producing the movement is inflamed, or that the movement is stretching some inflamed or injured tissue such as a ligament situated on the other side of the joint.

Passive Movement.—This is movement which is performed on the injured limb by the medical examiner himself without any effort on the part of the patient. The facts elicited during passive movement have the same significance as those elicited during active movement; but it is a means of determining more exactly whether or not muscle is involved.

If active movement causes pain, and passive movement in the same direction does not, it signifies that the muscle producing that movement is inflamed. If an active movement cannot be performed, and the same movement can be obtained passively, there is paralysis of the muscle involved or it has been torn across.

If a certain movement cannot be performed either

actively or passively, there is locking of the joint, due to shortening of the tissues on the side of the joint away from the direction of the movement, or to something between the bones on the same side as the movement, such as a displaced cartilage, a loose body, or a bony outgrowth.

Pain, loss of power, and stiffness of joints have already been discussed, and as they form the basis of the claim in nearly every Workmen's Compensation case, it has been thought necessary to devote a special chapter to each. The medical examination of any injured workman should be exhaustive. In a case where malingering is suspected, it resolves itself into a complete and searching investigation by every available means, and more particularly in these cases are X-ray and other electrical examinations imperative.

One is justified in testing the injured workman to see if he will contradict himself during the examination, or even examining him on a subsequent occasion, and comparing the record of his previous statements as to pain during manipulation of the injured part. This is sometimes the only means by which we can prove our suspicions to be correct in a case of malingering.

THE MEDICAL REPORT IN COMPENSATION CASES.

The medical report in compensation cases is an important document, forming, as it does in so many cases, the basis upon which the amount of compensation is decided by the Judge. The task of writing it should not be lightly undertaken, and it would be well to bear in mind the fact that the Judge will scrutinise it before giving his decision. For this reason, if for no other, the report should consist of a clear record of facts, expressed as free from medical technicalities as possible, and the opinion an intelligent summing up of these facts.

A medical report should be so explicit and so luminous that, from its perusal alone, an independent medical referee could form a definite opinion, not only as to the genuineness of the case, but as to the extent of the injuries, and the probable duration of disablement. It should therefore be more a record of facts than an expression of opinion. Unfortunately medical reports are not always thus composed, and the result is that in most medico-legal cases the medical report by the

workman's doctor is an apparently different document from that of the company's doctor.

Now this apparent difference should not exist, because although opinions frequently differ, facts never do.

If we analyse the medical aspect of any ordinary Workmen's Compensation case, what does it amount to? There are two medical reports, one by the workman's doctor, and one by the company's doctor. These are two totally different documents, when really they should practically agree, considering that in most cases the diagnosis is straightforward.

Why then should they differ, and what is the reason of the bias?

Surely no doctor could be accused of selling his soul and conscience for the sum of a few guineas, and no doctor is fool enough to imagine that his fluent tongue in the witness box will sway the Judge.

The bias is not a monetary one, but almost entirely sentimental. The general practitioner has, as a rule, a sympathetic personality; he knows the man and his family, he has probably seen them through hard times, he is their confidant and friend, and is not accustomed to be deceived.

The company's doctor on the other hand, looks at the case from a purely business point of view.

What has been the extent of the injury, and what is the probable duration of incapacity for work are the two questions which are uppermost in his mind.

He has probably examined thousands of injured workmen under the Compensation Act, and has learned to take a liberal discount off the alleged symptoms, and base his diagnosis more on signs than on symptoms. His experience of all degrees of malingering is fairly extensive, and he has learned therefore to adopt a different routine of examination to that practised by the workman's doctor. In fact he wants proof that every symptom really exists, and takes nothing on trust.

When we consider the two different points of view, and the present opinionative form of medical report, it is little wonder that the two reports are so apparently different. And still these are the two reports which go before the Judge, and upon him is laid the difficult task of weighing one opinion against the other. He must deduct so much sentiment from the medical opinion on the workman's side, and add so much to that on the company's side.

The cross-questioning in the witness box does little to elucidate the apparent difference between the two opinions.

Even if the Judge has the services of a medical assessor, the task of sifting the facts from the opinions is a difficult one.

How much fairer, how much better for all concerned, and how much easier for the Judge if the medical report consisted essentially of facts, and the opinion a logical summing up of these facts! The reports on the two sides would then agree in every detail, up to the point where the doctor's summing up of his own medical evidence is given.

The Judge's task, instead of weighing up a heterogeneous mass of medical opinion and medical fact, would be simply one of deciding which side showed the more reasonable, the more common-sense, and the more logical summing-up of the agreed medical facts.

The cross-questioning in the witness-box would also be narrowed down to the extracting of reasons for the special examiner's interpretation of the agreed facts.

A medical report should consist essentially of four parts:—(1) A history of the accident; (2) a record of symptoms since the accident; (3) a record of facts elicited during the examination; (4) a logical summing-up of facts.

(1.) **History of the Accident.**—This should be written down as nearly as possible in the man's

own words, shortly, of course, but with all the main facts recorded, special attention being paid to the nature and to the direction of the violence. The importance of this has already been alluded to, and it has been shown how the nature of the violence determines the nature of the injury. The history of the accident should therefore be compatible with the condition found on examination. I have just recently examined a case illustrative of this point, which, although a Court of Session case and not one under the Workmen's Compensation Act, 1906, is sufficiently interesting to be quoted. The whole question was—"What was the history of the accident?"

The agreed facts were (i.) that the pursuer was drunk at the time of the accident, and (ii.) that his leg was broken as a result of the accident. The pursuer's story was that he was being thrown out of a public-house, and that in the struggle he fell, and the man who was throwing him out fell on the top of him.

The defender's story was that he helped the pursuer out of the public-house, and left him standing against the wall, and that he must have subsequently fallen and broken his leg himself. Although I was not called upon to give evidence in this case, I was in a peculiar position in connection

with it, having taken a series of radiographs of the broken leg for the pursuer and another series for the defender.

The radiographs showed a fracture which must have been produced by a heavy weight falling upon the limb. From the direction of the fracture, the weight must have fallen on the outer side of the limb, and could not therefore have been the weight of the man's own body. The principal medical witnesses on both sides practically agreed upon the radiographic findings, and the pursuer was awarded damages.

This case shows the intimate relationship which exists between the history of the accident and the condition found on examination. It also shows the importance of X-ray examinations in all accident cases.

(2.) **Record of Symptoms since the Accident.**—This has already been referred to, and it has been shown how a chronological record of symptoms is a guide to the detection of intercurrent disease. It is more than this, however, because it is often a means whereby we can tell the extent of the injury and the probable duration of disablement. For example, in joint injuries, if there is an interval of a few hours between the receipt of the injury and the onset of swelling, the effusion into the joint is probably

clear fluid; if the interval is a few days, the probability is that it is due to intercurrent disease. If the swelling follows immediately on receipt of the injury, there has almost certainly been fairly extensive damage with consequent effusion of blood into the joint. The prognosis is infinitely worse in this case than in a case where the effusion into the joint is simply clear fluid (synovitis).

The history of symptoms since the accident is often interesting and instructive, though from a medical point of view, ludicrous in some cases of malingerer. Whether it is that the ordinary labourer is not of an observing turn of mind, or that he jumps to conclusions, or that he is a born malingerer, the fact remains that his ideas of cause and effect are often very far wide of the mark, as the following case will show:—

The patient, a miner, aged forty, alleged that he had been struck in the left groin by a heavy piece of coal. When seen three and a half months after the accident he complained that, as a result of the injury, he had developed a painful ankle on the right side. His history of symptoms and signs since the injury was as follows: Several days after being struck in the groin, a swelling developed there; the swelling spread over to the right leg, and gradually spread till it reached his ankle and

settled there. On examination, the ankle was certainly stiff, swollen, and I have no doubt, painful, for on X-ray examination the condition proved to be one of tuberculous disease.

It obviously, therefore, had no connection with his injury to the groin; and whether or not the man believed his own story, he was a malingerer so far as compensation was concerned.

(3.) **Record of Facts elicited during the Examination.**—This should be confined strictly to facts or alleged facts, and should contain no opinion whatsoever.

For example, in the examination of an ankle joint, if it be found that there is tenderness over the external ligament, and that there is pain produced when that ligament is put upon the stretch, these facts and these facts only should be recorded.

It would be unfair to put under this heading that the external ligament is torn, because that is only an opinion deduced from the two facts, and it may be wrong, because on X-ray examination it may be proved that the pain and tenderness are really due to a fracture of bone which has only stretched the external ligament.

The facts recorded under the above headings should be facts as agreed by both sides, such as—

There is alleged pain on certain movements.

There is alleged loss of power.

There is alleged stiffness.

There is swelling which extends from.....to.....

There is wasting of muscles to the extent of
.....inches.

Electrical reaction of muscles reveals the following facts, etc., etc.

If the case is thoroughly examined by both doctors, there should be a general agreement of all facts up to this point.

(4.) **The summing up** of the medical evidence contained in the report constitutes the opinion which is subscribed, and in whichever way the opinion may be biassed, it will be easy for any Judge to decide and adjudicate on the merits or demerits of the case.

If medical reports were framed on fact instead of on opinion, it would be safe to predict that no malingerer would ever come out of the Law Courts in a happier frame of mind than on his entry therein.

The following two "draft" reports, one of a genuine case, and one of a case of malingering, will, perhaps, show the value of the method suggested:—

DRAFT MEDICAL REPORT

(in a case of genuine injury).

Name.—John Smith, aged 34.

Occupation.—Labourer.

Complaint.—Inability to walk on account of pain and stiffness of the right ankle joint.

Date of Injury.—2nd May 1910.

Date of Examination.—16th May 1910.

History of Accident.—A fortnight ago, while walking along a plank, his right foot slipped over the edge of the plank and doubled underneath him as he fell.

History of Symptoms since the Accident.—He was able to limp home, but on reaching home his ankle was very painful and much swollen. Several days later the whole foot and ankle became discoloured. The swelling has gone down, but there is still pain on attempting to walk.

Facts elicited during the Medical Examination :—

There is slight discoloration over the front and sides of the right ankle.

There is slightly increased local heat over the joint.

The right ankle is swollen, measuring one inch more in circumference than the left.

Active movement is apparently limited to about half the normal range, and discomfort is alleged during its performance.

Passive movement is limited to a little more than half the normal range, and discomfort is alleged during the manipulation.

There is alleged severe pain over the outer side of the ankle on inverting the foot (bending it inwards).

There is alleged tenderness all over the ankle joint, with the point of maximum tenderness situated over the external lateral ligament of the joint.

X-ray examination of both ankles shows effusion into the right ankle joint, and into the surrounding tissues. There is no damage to bone.

Opinion.—I am of opinion that Smith has sustained a sprained ankle, the external lateral ligament of the joint being torn, because—

- (1.) The only movement of the joint causing actual pain is that in which the external lateral ligament is put upon the stretch.

- (2.) The point of maximum tenderness is situated immediately over that ligament.
- (3.) X-ray examination shows effusion into the joint and surrounding tissues, and shows no damage to bone.

I am of opinion that the condition found on examination was caused by the accident as described by Smith, because the direction of the violence was such as would produce tearing of the external lateral ligament of the ankle joint.

I am of opinion that Smith will be fit for work in three or four weeks.

(Signed)

DRAFT MEDICAL REPORT

(in a case of malingering).

Name.—..... aged 43.

Occupation.—Labourer.

Date of Injury.—1st August 1911.

Date of Examination.—18th July 1912.

History of Accident.—On 1st August 1911, while breaking pig iron with a heavy hammer, and while on the downstroke with the hammer he had a sudden pain in his left shoulder. He continued work for three hours after the onset of the pain. His shoulder was stiff next morning and he found that he could not raise his left arm above his head.

Complaint.—The condition of the shoulder has never altered since the date of the injury. He complains of—

- (1.) Pain on the outer side of the left arm, midway between the shoulder and the elbow.

(2.) Loss of power to raise the left arm above his head.

(3.) Stiffness of the left shoulder joint.

Facts elicited during the Medical Examination:—

Tenderness.—There is alleged tenderness on pressure over the site of the alleged pain, but when his attention is distracted, the alleged tender area may be firmly grasped without evincing any complaint.

Passive Movement.—The arm may be moved freely in every direction by the medical examiner without production of apparent discomfort, and without any complaint of pain.

Active Movement.—This is free in every direction except in the direction in which the arm is brought above the level of the shoulder. The allegation is that this movement is impossible on account of stiffness, loss of power, and pain. While his attention is distracted, however, as when his chest muscles are being electrically tested, he can raise the arm far beyond the horizontal position, and while putting on his shirt after completion of the examination, he put both arms perpendicularly above his head with apparent ease.

X-ray Examination reveals the following facts :—

- (1.) The bones entering into the formation of the shoulder joint are normal.
- (2.) The bone in the region of the alleged pain is normal.
- (3.) The shoulder joint is normal, and does not even show any rheumatoid changes which are so common after an injury.

Electrical Examination—Every muscle and every nerve in both arms from the shoulder to the wrist was electrically tested, and all were found to be absolutely normal in their reactions. The left side did not show even the modal change in reaction which is so commonly associated with atrophy from disuse.

Atrophy of Muscle.—There is no undue prominence of any of the bony landmarks. The measurements of the two sides practically correspond. The left being slightly less than the right, as is usual in right-handed persons, namely, three-eighths of an inch round the thickest part of the biceps, and three-quarters of an inch just above the shoulder. (This latter measurement is practically valueless, as it is liable to error on account of the tension of the

muscles entering into the axillary folds at the time of examination.)

Skin in the affected area.—There is no alteration in cutaneous sensibility, and no trophic changes apparent in the affected area.

Opinion.—I am of opinion that this man is malingerer, because—

(1.) The alleged loss of power has been proved to be non-existent, not only by exact electrical testing, but by the fact that he can perform the alleged impossible movements when he is off his guard.

(If a muscle is paralysed it exhibits a totally different electrical reaction from a healthy muscle.)

(2.) The alleged stiffness has been disproved by the fact that passive movement is possible in every direction, and by the fact that X-ray examination shows his left shoulder joint to be normal.

(3.) The alleged pain does not correspond with the condition found on examination for the following reasons:—

(a) The site of the pain has no anatomical

relation with the muscles which perform the alleged impossible movement.

(b) The period at which pain is alleged to be worst is when the alleged painful muscle is in a state of relaxation

(4.) The alleged pain does not correspond with the history of the accident for the following reasons:—

On the downstroke of a heavy hammer, if any rupture of tissue occurs, the lesion must be situated in bone, ligament, muscle, or nerve.

There has been no injury to muscle, otherwise the man could not have performed his work for three hours after the injury, and the electrical reaction of the muscles is normal. There is no evidence of injury to nerve, as the electrical reactions are all normal. There is no injury to bone, as X-ray examination proves the bones to be normal. There is no injury to ligament, because there are no ligaments within four inches of the site of the alleged pain.

(5.) The alleged pain is situated over the insertion of the deltoid muscle, and this

is the muscle which raises the arm from the side to a position horizontal, and in a line with the patient's body. No pain is complained of on performance of this movement.

(6.) The tenderness is present or absent according as his attention is fixed or distracted.

(7.) The symptoms neither agree with the signs, nor do they with one another.

I am of opinion, for the above reasons, that
..... is at present fit
for work.

(Signed)

A. W. A.

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